**AMENDMENTS TO THE CLAIMS:**

Please amend the claims as follows. This listing of claims will replace all prior versions and listings of claims in the application:

1.-38. (Canceled)

39. (Currently Amended) An optical modulator comprising:

~~an optical splitter for splitting an input light beam into a first and a second light beam;~~

a first and a second waveguide arm ~~connected to said optical splitter~~ for receiving and transmitting therethrough [[said]] first and second light beams, respectively~~, said first and second waveguide arms each comprising a core region comprising a group IV semiconductor material or a combination of group IV semiconductor materials~~;

~~an optical combiner connected to said first and second waveguide arms for receiving said first and second light beams and combine said first and second light beams into an output light beam;~~

a first and a second electrode structure associated with said first and second waveguide arms respectively; and

a driving circuit for supplying a voltage to said first and second electrode structures,

said driving circuit being adapted to supply a first modulation voltage superimposed to a first bias voltage to the first electrode structure and a second modulation voltage superimposed to a second bias voltage to the second electrode structure, a peak to peak amplitude of the first modulation voltage being different from a peak to peak amplitude of the second modulation voltage.

40. (Currently Amended) The optical modulator according to claim [[39]] 78, wherein the optical splitter is a symmetric splitter adapted to split the input light beam into the first and second light beams of substantially the same optical power.

41. (Previously Presented) The optical modulator according to claim 39, wherein the first and second waveguide arms are substantially of the same length.

42. (Currently Amended) The optical modulator according to claim [[39]] 78, wherein the group IV semiconductor material of each core region is selected from the group of Si and Ge and a combination thereof.

43. (Previously Presented) The optical modulator according to claim 39, further comprising a third electrode structure associated with one of the the first and second waveguide arms.

44. (Previously Presented) The optical modulator according to claim 43, wherein the driving circuit is adapted to supply to the third electrode structure a continuous wave voltage.

45. (Previously Presented) The optical modulator according to claim 39, wherein the driving circuit is adapted to supply the first and second modulation voltage as electric signals having the same waveform.

46. (Previously Presented) The optical modulator according to claim 45, wherein the driving circuit is adapted to supply the electric signals with inverted sign.

47. (Currently Amended) The optical modulator according to claim [[39]] 78, comprising a silicon substrate with said optical modulator integrated thereon.

48. (Currently Amended) A unit comprising:

an optical modulator ~~according to claim 39~~ comprising:

an optical splitter for splitting an input light beam into a first and a second light beam;

a first and a second waveguide arm connected to said optical splitter for receiving and transmitting therethrough said first and second light beams, respectively, said first and second waveguide arms each comprising a core region comprising a group IV semiconductor material or a combination of group IV semiconductor materials;

an optical combiner connected to said first and second waveguide arms for receiving said first and second light beams and combine said first and second light beams into an output light beam;

a first and a second electrode structure associated with said first and second waveguide arms respectively; and

a driving circuit for supplying a voltage to said first and second electrode structures,

said driving circuit being adapted to supply a first modulation voltage superimposed to a first bias voltage to the first electrode structure and a second modulation voltage superimposed to a second bias voltage to the second electrode structure, and

an electro-optical converter adapted to convert the input light beam into a corresponding electrical signal.

49. (Previously Presented) The unit according to claim 48, wherein the electro-optical converter is coupled to the optical modulator so as to supply the corresponding electrical signal to the driving circuit of the optical modulator.

50. (Previously Presented) The unit according to claim 48, further comprising a filtering element.

51. (Previously Presented) The unit according to claim 50, wherein the filtering element is coupled to the electro-optical converter.

52. (Previously Presented) The unit according to claim 50, wherein the filtering element is coupled to the optical modulator.

53. (Previously Presented) The unit according to claim 50, wherein the filtering element comprises a drop filtering element coupled to the electro-optical converter and an add filtering element coupled to the optical modulator.

54. (Previously Presented) The unit according to claim 48, wherein at least a portion of the electro-optical converter comprises a group IV semiconductor material or a combination of group IV semiconductor materials.

55. (Previously Presented) The unit according to claim 54, wherein the electro-optical converter and the optical modulator are integrated on a silicon substrate.

56. (Previously Presented) The unit according to claim 50, wherein the filtering element comprises a material selected from the group of a group IV semiconductor material, $SiO_2$, doped $SiO_2$, $Si_3N_4$, SiON and a combination thereof.

57. (Previously Presented) The unit according to claim 50, wherein the electro-optical converter, the optical modulator and the filtering element are integrated on a silicon substrate.

58. (Previously Presented) A transmitting station comprising an optical transmitter device, the optical transmitter device comprising an optical source for providing an optical light beam at a predetermined wavelength and an optical modulator according to claim 39, associated with the optical source to modulate the intensity of the optical light beam.

59. (Previously Presented) The transmitting station according to claim 58, wherein the optical transmitter device further comprises an electro-optical converter adapted to convert an input modulated light beam at a generic wavelength into a corresponding modulation electric

signal, the electro-optical converter being coupled to the optical modulator so as to supply said corresponding modulation electric signal to the driving circuit of the optical modulator.

60. (Previously Presented) An optical communication system comprising a transmitting station according to claim 58, and an optical communication line having a first end coupled to the transmitting station.

61. (Previously Presented) The optical communication system according to claim 60, further comprising a receiving station coupled to a second end of the optical communication line.

62. (Previously Presented) An optical communication system comprising a transmitting station comprising:

an optical transmitter device wherein said optical transmitter device comprises an optical source for providing an optical light beam at a predetermined wavelength and an optical modulator according to claim 39, associated with the optical source to modulate the intensity of the optical light beam;

an electro-optical converter; and

an optical communication line having a first end coupled to the transmitting station,

the optical modulator and the electro-optical converter comprising a unit adapted to convert an input optical light beam into a corresponding electrical signal.

63. (Currently Amended) A method for modulating an intensity of [[a light beam]] <u>an optical signal</u> comprising the steps of:

a) ~~splitting the light beam into a first and a second light beam;~~

~~b)~~ propagating [[said]] first and second light beams along a first and a second optical path, respectively~~, each of said first and second optical paths comprising a group~~

~~IV semiconductor material or a combination of group IV semiconductor materials~~;

~~c) combining said first and second light beam into an output light beam after propagation along the first and second optical paths;~~ and

[[d)]] b) introducing through Franz-Keldysh effect a relative phase shift between the first and second optical paths so as to obtain an intensity modulation of [[the]] an output light beam;

wherein the step of introducing through the Franz-Keldysh effect is carried out by supplying a first modulation voltage superimposed to a first bias voltage to ~~the group IV semiconductor material of~~ the first optical path and a second modulation voltage superimposed to a second bias voltage to ~~the group IV semiconductor material of~~ the second optical path, a peak to peak amplitude of the first modulation voltage being different from a peak to peak amplitude of the second modulation voltage.

64. (Currently Amended) The method according to claim [[63]] 80, wherein ~~in step a)~~ the light beam is split into the first and second light beams of substantially the same optical power.

65. (Currently Amended) The method according to claim 63, further comprising ~~a step e) of~~ supplying to at least one of the first and second optical paths a continuous wave voltage for introducing a further prefixed relative phase shift between the first and second optical paths.

66. (Currently Amended) The method according to claim 63, wherein ~~in step d)~~ a relative phase shift of $\pi$ or an integer odd multiple thereof is introduced for obtaining a 0 logic state and a relative phase shift of zero or an integer even multiple of $\pi$ is introduced for obtaining a 1 logic state.

67. (Previously Presented) The method according to claim 66, wherein the first and second modulation voltages are electric signals having the same waveform.

68. (Previously Presented) The method according to claim 67, wherein the electric signals have an inverted sign.

69. (Previously Presented) The method according to claim 68, wherein the first and second bias voltages and the first and second modulation voltages are such as to induce through the Franz-Keldysh effect an overall phase shift in the first and second optical paths which is substantially the same in absolute value but opposite in sign when passing from the 1 logic state to the 0 logic state, and vice versa.

70. (Previously Presented) The method according to claim 69, wherein the first bias voltage is substantially the same as the second bias voltage.

71. (Canceled)

72. (Previously Presented) The method according to claim 69, wherein the first bias voltage is different from the second bias voltage.

73. (Previously Presented) A method for modulating an intensity of a light beam comprising the steps of:

a) splitting the light beam into a first and a second light beam;

b) propagating said first and second light beams along a first and a second optical path, respectively;

c) combining said first and second light beam into an output light beam after propagation along the first and second optical paths; and

d) introducing through Franz-Keldysh effect a relative phase shift between the first and second optical paths so as to obtain an intensity modulation of the output light beam;

wherein the step of introducing through the Franz-Keldysh effect is carried out by supplying a first modulation voltage superimposed to a first bias voltage to the first optical path and a second modulation voltage superimposed to a second bias voltage to the second optical path,

wherein in step d) a relative phase shift of $\pi$ or an integer odd multiple thereof is introduced for obtaining a 0 logic state and a relative phase shift of zero or an integer even multiple of $\pi$ is introduced for obtaining a 1 logic state,

wherein the first and second modulation voltages are electric signals having the same waveform,

wherein the electric signals have an inverted sign,

wherein the first and second bias voltages and the first and second modulation voltages are such as to induce through the Franz-Keldysh effect an overall phase shift in the first and second optical paths which is substantially the same in absolute value but opposite in sign when passing from the 1 logic state to the 0 logic state, and vice versa,

wherein the first bias voltage is different from the second bias voltage, and

wherein a peak to peak amplitude of the first modulation voltage is different from a peak to peak amplitude of the second modulation voltage.

74. (Previously Presented) The method according to claim 68, wherein the first and second bias voltages and the first and second modulation voltages are such as to induce through the Franz-Keldysh effect an overall phase shift in the first and second optical paths which is different in absolute value and sign, when passing from the 1 logic state to the 0 logic state, and vice versa.

75. (Previously Presented) The method according to claim 74, wherein the first bias voltage is different from the second bias voltage.

76. (Canceled)

77. (New) The optical modulator according to claim 39, further comprising:

an optical splitter for splitting an input light beam into the first and second light beams; and

an optical combiner connected to the first and second waveguide arms for combining the first and second light beams into the output light beam.

78. (New) The optical modulator according to claim 77, wherein the first and second waveguide arms each comprise a core region comprising a group IV semiconductor material or a combination of group IV semiconductor materials.

79. (New) The method according to claim 63, comprising:

splitting a light beam into the first and second light beams; and

combining the first and second light beams into an output light beam after propagation along the first and second optical paths.

80. (New) The method according to claim 79, wherein each of the first and second optical paths comprises a group IV semiconductor material or a combination of group IV semiconductor materials.